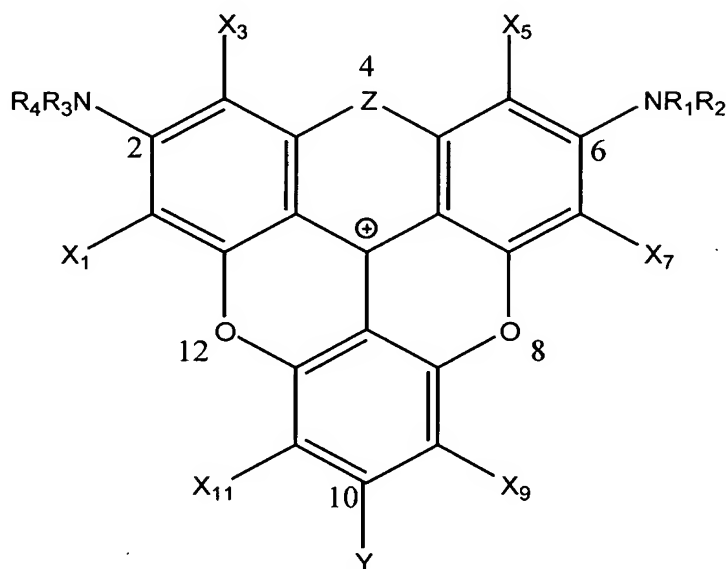


**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Original) A fluorescent dye compound comprising the structure



wherein  $X_1$ ,  $X_3$ ,  $X_5$ ,  $X_7$ ,  $X_9$ , and  $X_{11}$  are independently H, Cl or F;

wherein Y is selected from the group consisting of H, Cl, F,

$NR_5R_6$ ,  $OR_7$ ,  $SR_8$ , and  $R_9$ ;

wherein Z is O or  $NR_{10}$ , and

wherein  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$ ,  $R_6$ ,  $R_7$ ,  $R_8$ ,  $R_9$ , and  $R_{10}$  is

independently H, an optionally substituted alkyl, an

optionally substituted aryl, or an optionally polymerized

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substituted or unsubstituted monomer selected from the group consisting of styrene, acrylate, (meth)acrylate, hydroxymethyl(meth)acrylate, acrylamide, acetate, vinylacetate, vinylether, vinylpyrrolidone, oxirane, oxetane, oxolane, episulfide, thiotane, cyclic amine, or  $R_1$  and  $R_2$  together with the nitrogen to which they are attached form a substituted or unsubstituted heterocyclic, or  $R_3$  and  $R_4$  together with the nitrogen to which they are attached form a substituted or unsubstituted heterocyclic, or  $R_5$  and  $R_6$  together with the nitrogen to which they are attached form a substituted or unsubstituted heterocyclic, or wherein at least one of  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$ ,  $R_6$ ,  $R_7$ ,  $R_8$ ,  $R_9$ , and  $R_{10}$  comprises at least one reactive group or at least one reactive moiety, wherein the at least one reactive group is selected from the group consisting of vinyl, allyl, hydroxy, primary amine, secondary amine, carboxy, carbonyl, nitro, cyano, isothiocyanate, halogen, phosphonyl, sulphonate, sulphonyl, sulfamyl, and thiolyl, including any combination thereof, wherein the at least one reactive moiety is selected from the group consisting of an activated ester, such as N-succinimidyl ester, maleimide ester, or fluorophenol ester, such as pentafluorophenol ester; acid halide, such as acid chloride or acid bromide; sulfonyl halide, such as sulfonyl chloride or sulfonyl bromide; tosylate, mesylate, phtalimido, azido, an

optionally polymerized substituted or unsubstituted styrene, an optionally polymerized substituted or unsubstituted acrylate, an optionally polymerized substituted or unsubstituted (meth)acrylate, an optionally polymerized substituted or unsubstituted hydroxymethyl(meth)acrylate; an optionally polymerized substituted or unsubstituted acrylamide, an optionally polymerized substituted or unsubstituted acetate, an optionally polymerized substituted or unsubstituted vinylacetate; an optionally polymerized substituted or unsubstituted vinylether; an optionally polymerized substituted or unsubstituted vinylpyrrolidone, an optionally polymerized substituted or unsubstituted oxirane; an optionally polymerized substituted or unsubstituted oxetane, an optionally polymerized substituted or unsubstituted oxolane; an optionally polymerized substituted or unsubstituted episulfide; an optionally polymerized substituted or unsubstituted thiotane; and an optionally polymerized substituted or unsubstituted cyclic amine, with the proviso that  $R_1$  to  $R_6$  are not all identical linear alkyls when Y is  $NR_5R_6$  and Z is O, and that  $R_1$  and  $R_2$  are not both ethyl when  $NR_3R_4$  and  $NR_5R_6$  both constitute a morpholinyl ring.

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2. (Original) The fluorescent dye compound according to claim 1, wherein  $X_1$ ,  $X_3$ ,  $X_5$ ,  $X_7$ ,  $X_9$ , and  $X_{11}$  are all H.

3. (Original) The fluorescent dye compound according to claim 1, wherein  $X_1$ ,  $X_3$ ,  $X_5$ ,  $X_7$ ,  $X_9$ , and  $X_{11}$  are all Cl.

4. (Original) The fluorescent dye compound according to claim 1, wherein  $X_1$ ,  $X_3$ ,  $X_5$ ,  $X_7$ ,  $X_9$ , and  $X_{11}$  are all F.

5. (Currently Amended) The fluorescent dye compound according to ~~any of claims 1 to 4~~ claim 1, wherein Y is selected from H, Cl, and F.

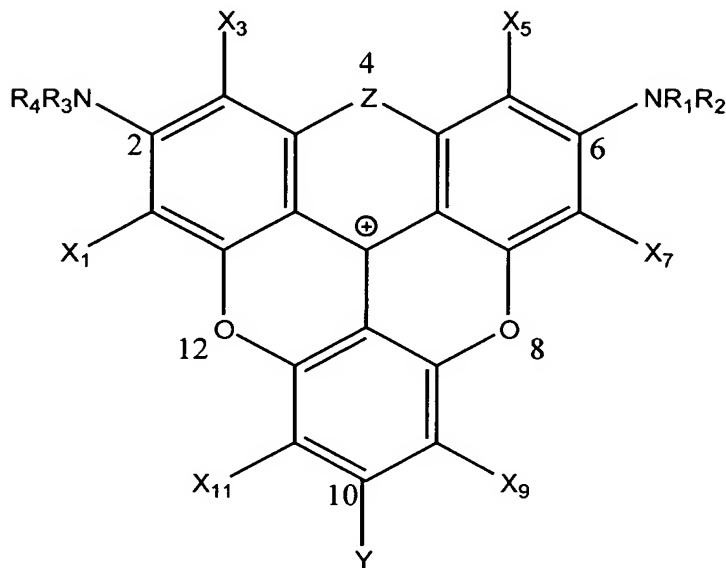
Claims 6-8 - (Cancelled).

9. (Currently Amended) The fluorescent dye compound according to ~~claim 8~~ 1, wherein Z is O or  $NR_{10}$ .

Claims 10-11 - (Cancelled).

12. (Currently Amended) The fluorescent dye compound according to ~~any of claims 1 to 4~~ claim 1, wherein Y is selected from the group consisting of  $NR_5R_6$ ,  $OR_7$ ,  $SR_8$ , and  $R_9$ .

70. A fluorescent dye compound comprising the structure



wherein Y is selected from the group consisting of H, Cl, F,

wherein Z is O or NR<sub>10</sub>, and

independently from the group consisting of:

substituted and unsubstituted alkyl, substituted and

unsubstituted haloalkyl, substituted and unsubstituted

hydroxyalkyl, substituted and unsubstituted alkylsulfonyl,

substituted and unsubstituted alkenyl,

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halo,

substituted and unsubstituted alkoxy, substituted and unsubstituted alkoxyalkyl, substituted and unsubstituted haloalkoxy, substituted and unsubstituted haloalkoxyalkyl, substituted and unsubstituted aryl, substituted and unsubstituted heterocyclic, substituted and unsubstituted heteroaryl, sulfonyl, substituted and unsubstituted alkylsulfonyl, substituted and unsubstituted arylsulfonyl, sulfamyl, sulfonamidyl, aminosulfonyl, substituted and unsubstituted N-alkylaminosulfonyl, substituted and unsubstituted N-arylaminosulfonyl, substituted and unsubstituted N,N-dialkylaminosulfonyl, substituted and unsubstituted N-alkyl-N-arylaminosulfonyl, substituted and unsubstituted N-alkylaminosulfonyl, substituted and unsubstituted N,N-dialkylaminosulfonyl, substituted and unsubstituted N-arylaminosulfonyl, substituted and unsubstituted N-alkyl-N-arylaminosulfonyl, carboxy, substituted and unsubstituted carboxyalkyl, carbonyl, substituted and unsubstituted alkylcarbonyl, substituted and unsubstituted alkylcarbonylalkyl, substituted and unsubstituted alkoxycarbonyl, substituted and unsubstituted alkoxycarbonylalkyl,

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aminocarbonyl, substituted and unsubstituted  
aminocarbonylalkyl, substituted and unsubstituted N-  
alkylaminocarbonyl, substituted and unsubstituted N-  
arylaminocarbonyl, substituted and unsubstituted N,N-  
dialkylaminocarbonyl, substituted and unsubstituted N-alkyl-N-  
arylaminocarbonyl, substituted and unsubstituted N-alkyl-N-  
hydroxyaminocarbonyl, substituted and unsubstituted N-alkyl-N-  
hydroxyaminocarbonylalkyl, substituted and unsubstituted N-  
alkylaminocarbonyl, substituted and unsubstituted N,N-  
dialkylaminocarbonyl, substituted and unsubstituted N-  
arylaminocarbonyl, substituted and unsubstituted N-alkyl-N-  
arylaminocarbonyl, substituted and unsubstituted  
aminocarbonylalkyl, substituted and unsubstituted N-  
cycloalkylaminocarbonyl,  
substituted and unsubstituted aminoalkyl, substituted and  
unsubstituted alkylaminoalkyl,  
amidino,  
cyanoamidino,  
substituted and unsubstituted heterocyclicalkyl,  
substituted and unsubstituted aralkyl,  
substituted and unsubstituted cycloalkyl,  
substituted and unsubstituted cycloalkenyl,  
substituted and unsubstituted alkylthio,  
substituted and unsubstituted alkylsulfinyl,

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substituted and unsubstituted N-alkylamino, substituted and unsubstituted N,N-dialkylamino, substituted and unsubstituted arylamino, substituted and unsubstituted aralkylamino, substituted and unsubstituted N-alkyl-N-aryl amino, substituted and unsubstituted N-aralkyl-N-alkylamino, substituted and unsubstituted N-arylaminoalkyl, substituted and unsubstituted N-aralkylaminoalkyl, substituted and unsubstituted N-alkyl-N-arylaminoalkyl, substituted and unsubstituted N-aralkyl-N-alkylaminoalkyl, acyl, acylamino, substituted and unsubstituted arylthio, substituted and unsubstituted aralkylthio, substituted and unsubstituted aryloxy, substituted and unsubstituted aralkoxy, substituted and unsubstituted haloaralkyl, substituted and unsubstituted carboxyhaloalkyl, substituted and unsubstituted alkoxycarbonylhaloalkyl, substituted and unsubstituted aminocarbonylhaloalkyl, substituted and unsubstituted alkylaminocarbonylhaloalkyl, substituted and unsubstituted alkoxycarbonylcyanoalkenyl, substituted and unsubstituted carboxyalkylaminocarbonyl, substituted and unsubstituted aralkoxycarbonylalkylaminocarbonyl, substituted and unsubstituted cycloalkylalkyl, and

substituted and unsubstituted aralkenyl,

wherein at least one of said substituents R1 to R10 comprises

a) one or more reactive groups selected from the group

consisting of vinyl, allyl, hydroxy, primary amine, secondary amine, carboxy, carbonyl, nitro, cyano, isothiocyanate, halogen, phosphonyl, sulphonate, sulphonyl, sulfamyl, and thioly, or

b) one or more reactive moieties selected from the group

consisting of an activated ester, such as N-succinimidyl ester, maleimide ester, or fluorophenol ester, including pentafluorophenol ester; acid halide, such as acid chloride or acid bromide; sulfonyl halide, such as sulfonyl chloride or sulfonyl bromide; tosylate, mesylate, phtalimido, azido, an optionally polymerized substituted or unsubstituted styrene, an optionally polymerized substituted or unsubstituted acrylate, an optionally polymerized substituted or unsubstituted (meth)acrylate, an optionally polymerized substituted or unsubstituted hydroxymethyl(meth)acrylate; an optionally polymerized substituted or unsubstituted acrylamide, an optionally polymerized substituted or unsubstituted acetate, an optionally polymerized substituted or unsubstituted vinylacetate; an optionally polymerized substituted or unsubstituted vinylether; an optionally polymerized

substituted or unsubstituted vinylpyrrolidone, an optionally polymerized substituted or unsubstituted oxirane; an optionally polymerized substituted or unsubstituted oxetane, an optionally polymerized substituted or unsubstituted oxolane; an optionally polymerized substituted or unsubstituted episulfide; an optionally polymerized substituted or unsubstituted thiotane; and an optionally polymerized substituted or unsubstituted cyclic amine, with the proviso that  $R_1$  to  $R_6$  are not all identical linear alkyls when Y is  $NR_5R_6$  and Z is O, and that  $R_1$  and  $R_2$  are not both ethyl when  $NR_3R_4$  and  $NR_5R_6$  both constitute a morpholinyl ring.

71. (Original) The fluorescent dye compound according to claim 70, wherein  $X_1$ ,  $X_3$ ,  $X_5$ ,  $X_7$ ,  $X_9$ , and  $X_{11}$  are all H.

72. (Original) The fluorescent dye compound according to claim 70, wherein  $X_1$ ,  $X_3$ ,  $X_5$ ,  $X_7$ ,  $X_9$ , and  $X_{11}$  are all Cl.

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73. (Original) The fluorescent dye compound according to claim 70, wherein  $X_1$ ,  $X_3$ ,  $X_5$ ,  $X_7$ ,  $X_9$ , and  $X_{11}$  are all F.

74. (Original) The fluorescent dye compound according to claim 70, wherein Y is selected from H, Cl, and F.

Claims 75-77 - (Cancelled)

78. (Currently Amended) The fluorescent dye compound according to ~~any of claims 70 to 73~~ claim 70, wherein Y is selected from the group consisting of  $NR_5R_6$ ,  $OR_7$ ,  $SR_8$ , and  $R_9$ .

Claims 79-82 - (Cancelled)

83. The fluorescent dye compound according to claim 78, wherein Y comprises a reactive group capable of undergoing polymerization.

Claim 84 - (Cancelled)

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85. The fluorescent dye compound according to claim 78, wherein Y is a linker capable of linking the dye compound to a polymer matrix.

Claim 86 - (Cancelled)

87. (Currently Amended) The fluorescent dye compound according to ~~any of claims 74 to 86~~ claim 70, wherein Z is O or NR<sub>10</sub>.

Claims 88-90 - (Cancelled)

91. (Currently Amended) Method for producing a polymer matrix comprising a fluorescent dye, said method comprising the steps of providing a monomer or a polymer matrix and reacting the fluorescent dye compound according to ~~any of claims 1 to 90~~ claim 1, or a precursor thereof, with the monomer or polymer matrix, and optionally reacting the fluorescent dye compound precursor to obtain the fluorescent dye compound, and further optionally polymerizing the monomers to obtain a polymer matrix.

Claims 92-93 - (Cancelled)

94. (Currently Amended) An encoded beaded or granulated polymer matrix for solid phase synthesis comprising beads or granules each comprising a plurality of spatially immobilised particles or vacuoles, wherein each particle or vacuole comprises at least one fluorescent dye compound according to ~~any of claims 1 to 90~~ claim 1, wherein each particle or vacuole is individually detectable.

95. (New) Method for producing a polymer matrix comprising a fluorescent dye, said method comprising the steps of providing a monomer or a polymer matrix and reacting the fluorescent dye compound according to claim 70, or a precursor thereof, with the monomer or polymer matrix, and optionally reacting the fluorescent dye compound precursor to obtain the fluorescent dye compound, and further optionally polymerizing the monomers to obtain a polymer matrix.

96. (New) An encoded beaded or granulated polymer matrix for solid phase synthesis comprising beads or granules each comprising a plurality of spatially immobilised particles or vacuoles, wherein each particle or vacuole comprises at least one fluorescent dye compound according to claim 70, wherein each particle or vacuole is individually detectable.